BORROWED CAPITAL LIMITS

- DAIRY -

ASSUMPTIONS:

[1] **Gross Receipts** - Gross Receipts are composed of milk sales and milk subsidies. In addition, livestock and crop sales, and one-third of the miscellaneous sales in the amount of $320. per cow are added.

[2] **Expenses** - Expenses to produce milk were estimated to be 76.2 percent of Gross Receipts. Expenses included all direct operating costs plus repairs, taxes, and insurance. It should be noted that the Nova Scotia Dairy Farm Business Summaries for the years 1981-85 inclusive were used as a basis for the above calculations.

[3] **Labor** - Operator Labor was estimated to be $225. per cow. This amount represents unpaid operator labor and must be considered a very minimum living allowance.

[4] **Formula** - The following formula was then used to calculate a Residual for Interest and Principal Repayment.

GROSS RECEIPTS - EXPENSES - LABOR = RESIDUAL FOR

INTEREST AND LOAN REPAYMENT

[5] **Repayment - Capitalization Rate** - Although the name assigned may be somewhat out of context from what is generally understood to be Capitalization Rate, what is visualized is to calculate the Repayment Capacity given various residuals and loan combinations.

To calculate the various Repayment - Capitalization Rates, the following additional assumptions were made:

(a) Farm Loan Board - It was assumed that long term financing would be available from this service using a loan amortized over 20 years with an annual interest rate of 9 percent.

(b) Bank and Other - It was assumed that short and intermediate term financing would be available. It was further assumed that a blend or composite repayment term of

four (4) years with an annual interest rate of 14.4 percent (Amortized Loan) would be appropriate.

(c) Equity - Equity was not considered since the main thrust of this booklet was to estimate repayment of interest and principal monies borrowed from businesses external to the farm business as opposed to total capitalization.

(d) Table 1 - This table represents the Repayment - Capitalization Rate for various loan combinations.

[6] **DIRECTIONS FOR USE** - In order to make use of the information contained in the following tables, several steps are involved. These include:

(a) Determine the Total Capital to be borrowed by the farm business.

(b) Determine the number of cows.

(c) Determine the ratio or percentage of these borrowed funds from, (i) Farm Loan Board, and (ii) Bank and other.

(d) Using this ratio, refer to Table 1 and determine the Repayment - Capitalization Rate.

(e) Using the rate obtained from Table 1, select the appropriate Production Level Table; find the correct blend price to be received for milk; and determine the amount of capital that can be repaid by the farm business.

[7] **EXAMPLE CALCULATION** - A prospective farm family wishes to know if they can borrow $235,500. to purchase a 60 cow dairy farm. They wish to borrow $223,725. from the Farm Loan Board, and the balance $11,775. from the Bank. They estimate that the herd will produce 6,000 litres of milk per cow per year, and that the blend price for milk will be $43.75 per hectolitre.

(a) Borrowings per Cow = $\frac{\$235,500.}{60} = \$3,925.$

(b) Percentage of Borrowed Funds from:

(i) Farm Loan Board - 95%
(ii) Bank - 5%

(c) Table 1 - Repayment-Capitalization Rate = 12.1

(d) Borrowed Capital Limit from the 6,000 Litre Production Level Table at a blend milk price of $44. per hectolitre is $3,941.

(e) Based on 60 cows, the prospective farm family could meet their debt obligations on their proposed purchase (assuming cost, returns and borrowed patterns as suggested).

[8] **EDITORS NOTE** - The information contained in this booklet is intended for use only as a guide. The information was not developed from random sample data - hence, interpretation and use beyond that as a guide to budgeting is beyond the intent or scope of this paper.

TABLE 1

REPAYMENT - CAPITALIZATION RATE

% BORROWED FROM		REPAYMENT CAP.RATE	% BORROWED FROM		REPAYMENT CAP.RATE
FARM LOAN	BANK		FARM LOAN	BANK	
100	0	10.9	45	55	23.9
95	5	12.1	40	60	25.1
90	10	13.3	35	65	26.3
85	15	14.5	30	70	27.5
80	20	15.6	25	75	28.7
75	25	16.8	20	80	29.9
70	30	18.0	15	85	31.0
65	35	19.2	10	90	32.2
60	40	20.4	5	95	33.4
55	45	21.6	0	100	34.6
50	50	22.8			

4500 LITRE PRODUCTION LEVEL

REPAY-CAP RATE	PRICE/HL										
	$45.50	$46.25	$47.00	$47.75	$48.50	$49.25	$50.00	$50.75	$51.50	$52.25	$53.00
10.9 %	3105	3179	3253	3326	3400	3474	3547	3621	3695	3768	3842
12.1 %	2801	2867	2934	3000	3067	3133	3200	3266	3332	3399	3465
13.3 %	2551	2611	2672	2732	2793	2853	2914	2974	3035	3095	3156
14.5 %	2342	2397	2453	2508	2564	2619	2675	2730	2786	2842	2897
15.6 %	2164	2215	2267	2318	2370	2421	2472	2524	2575	2626	2678
16.8 %	2012	2059	2107	2155	2203	2250	2298	2346	2394	2441	2489
18.0 %	1879	1924	1969	2013	2058	2102	2147	2192	2236	2281	2325
19.2 %	1763	1805	1847	1889	1931	1973	2014	2056	2098	2140	2182
20.4 %	1661	1700	1740	1779	1818	1858	1897	1937	1976	2015	2055
21.6 %	1570	1607	1644	1681	1719	1756	1793	1830	1867	1905	1942
22.8 %	1488	1523	1558	1594	1629	1664	1700	1735	1770	1806	1841
23.9 %	1414	1448	1481	1515	1548	1582	1615	1649	1683	1716	1750
25.1 %	1347	1379	1411	1443	1475	1507	1539	1571	1603	1635	1667
26.3 %	1287	1317	1348	1378	1409	1439	1470	1500	1531	1562	1592
27.5 %	1231	1260	1290	1319	1348	1377	1407	1436	1465	1494	1523
28.7 %	1180	1208	1236	1264	1292	1320	1348	1376	1404	1432	1460
29.9 %	1134	1160	1187	1214	1241	1268	1295	1322	1349	1376	1403
31.0 %	1090	1116	1142	1168	1194	1220	1245	1271	1297	1323	1349
32.2 %	1050	1075	1100	1125	1150	1175	1200	1225	1250	1274	1299
33.4 %	1013	1037	1061	1085	1109	1133	1157	1181	1205	1229	1253
34.6 %	978	1001	1025	1048	1071	1094	1118	1141	1164	1187	1210

5000 LITRE PRODUCTION LEVEL

REPAY-CAP RATE	PRICE/HL										
	$45.50	$46.25	$47.00	$47.75	$48.50	$49.25	$50.00	$50.75	$51.50	$52.25	$53.00
10.9 %	3602	3684	3766	3848	3929	4011	4093	4175	4257	4339	4421
12.1 %	3249	3323	3396	3470	3544	3618	3692	3766	3840	3913	3987
13.3 %	2959	3026	3093	3160	3228	3295	3362	3429	3497	3564	3631
14.5 %	2716	2778	2840	2901	2963	3025	3087	3148	3210	3272	3334
15.6 %	2510	2567	2624	2681	2739	2796	2853	2910	2967	3024	3081
16.8 %	2333	2387	2440	2493	2546	2599	2652	2705	2758	2811	2864
18.0 %	2180	2230	2279	2329	2378	2428	2477	2527	2576	2626	2676
19.2 %	2045	2092	2138	2185	2231	2278	2324	2371	2417	2464	2510
20.4 %	1926	1970	2014	2058	2102	2145	2189	2233	2277	2321	2364
21.6 %	1821	1862	1903	1945	1986	2028	2069	2110	2152	2193	2234
22.8 %	1726	1765	1804	1843	1883	1922	1961	2000	2040	2079	2118
23.9 %	1640	1678	1715	1752	1789	1827	1864	1901	1939	1976	2013
25.1 %	1563	1598	1634	1670	1705	1741	1776	1812	1847	1883	1918
26.3 %	1493	1526	1560	1594	1628	1662	1696	1730	1764	1798	1832
27.5 %	1428	1461	1493	1526	1558	1591	1623	1655	1688	1720	1753
28.7 %	1369	1400	1431	1463	1494	1525	1556	1587	1618	1649	1680
29.9 %	1315	1345	1375	1405	1434	1464	1494	1524	1554	1584	1614
31.0 %	1265	1293	1322	1351	1380	1408	1437	1466	1495	1523	1552
32.2 %	1218	1246	1274	1301	1329	1357	1384	1412	1440	1467	1495
33.4 %	1175	1202	1228	1255	1282	1308	1335	1362	1389	1415	1442
34.6 %	1135	1161	1186	1212	1238	1264	1289	1315	1341	1367	1393

5500 LITRE PRODUCTION LEVEL

REPAY-CAP RATE	PRICE/HL										
	$45.50	$46.25	$47.00	$47.75	$48.50	$49.25	$50.00	$50.75	$51.50	$52.25	$53.00
10.9 %	4099	4189	4279	4369	4459	4549	4639	4729	4819	4909	4999
12.1 %	3697	3778	3859	3940	4022	4103	4184	4265	4347	4428	4509
13.3 %	3367	3441	3515	3589	3663	3737	3811	3885	3959	4032	4106
14.5 %	3091	3159	3226	3294	3362	3430	3498	3566	3634	3702	3770
15.6 %	2856	2919	2982	3045	3108	3170	3233	3296	3359	3421	3484
16.8 %	2655	2714	2772	2830	2889	2947	3005	3064	3122	3180	3239
18.0 %	2481	2535	2590	2644	2699	2753	2808	2862	2917	2971	3026
19.2 %	2327	2379	2430	2481	2532	2583	2634	2685	2737	2788	2839
20.4 %	2192	2240	2288	2337	2385	2433	2481	2529	2578	2626	2674
21.6 %	2072	2117	2163	2208	2254	2299	2345	2390	2436	2481	2527
22.8 %	1964	2007	2050	2093	2136	2180	2223	2266	2309	2352	2395
23.9 %	1867	1908	1949	1990	2031	2072	2113	2154	2195	2236	2277
25.1 %	1778	1818	1857	1896	1935	1974	2013	2052	2091	2130	2169
26.3 %	1698	1736	1773	1810	1848	1885	1922	1960	1997	2034	2072
27.5 %	1625	1661	1697	1732	1768	1804	1839	1875	1911	1947	1982
28.7 %	1558	1592	1626	1661	1695	1729	1763	1798	1832	1866	1900
29.9 %	1496	1529	1562	1595	1628	1661	1693	1726	1759	1792	1825
31.0 %	1439	1471	1502	1534	1566	1597	1629	1660	1692	1724	1755
32.2 %	1386	1417	1447	1478	1508	1538	1569	1599	1630	1660	1691
33.4 %	1337	1366	1396	1425	1455	1484	1513	1543	1572	1601	1631
34.6 %	1291	1320	1348	1376	1405	1433	1461	1490	1518	1547	1575

6000 LITRE PRODUCTION LEVEL

REPAY-CAP RATE	PRICE/HL $45.50	$46.25	$47.00	$47.75	$48.50	$49.25	$50.00	$50.75	$51.50	$52.25	$53.00
10.9 %	4595	4694	4792	4890	4988	5087	5185	5283	5381	5480	5578
12.1 %	4145	4233	4322	4411	4499	4588	4677	4765	4854	4942	5031
13.3 %	3775	3855	3936	4017	4098	4178	4259	4340	4420	4501	4582
14.5 %	3465	3539	3613	3688	3762	3836	3910	3984	4058	4132	4206
15.6 %	3203	3271	3340	3408	3477	3545	3614	3682	3751	3819	3887
16.8 %	2977	3041	3104	3168	3232	3295	3359	3423	3486	3550	3614
18.0 %	2781	2841	2900	2960	3019	3079	3138	3198	3257	3316	3376
19.2 %	2610	2665	2721	2777	2833	2889	2944	3000	3056	3112	3167
20.4 %	2458	2510	2563	2615	2668	2721	2773	2826	2878	2931	2983
21.6 %	2323	2372	2422	2472	2521	2571	2621	2670	2720	2770	2819
22.8 %	2202	2249	2296	2343	2390	2437	2484	2531	2578	2625	2673
23.9 %	2093	2137	2182	2227	2272	2316	2361	2406	2451	2495	2540
25.1 %	1994	2037	2079	2122	2165	2207	2250	2292	2335	2378	2420
26.3 %	1904	1945	1986	2026	2067	2108	2148	2189	2230	2271	2311
27.5 %	1822	1861	1900	1939	1978	2017	2056	2095	2134	2173	2212
28.7 %	1747	1784	1822	1859	1896	1934	1971	2008	2046	2083	2120
29.9 %	1677	1713	1749	1785	1821	1857	1893	1929	1964	2000	2036
31.0 %	1613	1648	1682	1717	1751	1786	1820	1855	1889	1924	1958
32.2 %	1554	1587	1621	1654	1687	1720	1754	1787	1820	1853	1886
33.4 %	1499	1531	1563	1595	1627	1659	1691	1723	1755	1787	1820
34.6 %	1448	1479	1510	1541	1572	1602	1633	1664	1695	1726	1757

6500 LITRE PRODUCTION LEVEL

REPAY-CAP RATE	PRICE/HL $45.50	$46.25	$47.00	$47.75	$48.50	$49.25	$50.00	$50.75	$51.50	$52.25	$53.00
10.9 %	5092	5199	5305	5411	5518	5624	5731	5837	5944	6050	6157
12.1 %	4593	4689	4785	4881	4977	5073	5169	5265	5361	5457	5553
13.3 %	4183	4270	4358	4445	4532	4620	4707	4795	4882	4970	5057
14.5 %	3840	3920	4000	4081	4161	4241	4321	4402	4482	4562	4642
15.6 %	3549	3623	3697	3771	3846	3920	3994	4068	4142	4217	4291
16.8 %	3299	3368	3437	3506	3575	3644	3713	3782	3851	3920	3989
18.0 %	3082	3146	3211	3275	3340	3404	3468	3533	3597	3662	3726
19.2 %	2892	2952	3013	3073	3133	3194	3254	3315	3375	3436	3496
20.4 %	2723	2780	2837	2894	2951	3008	3065	3122	3179	3236	3293
21.6 %	2574	2628	2681	2735	2789	2843	2897	2950	3004	3058	3112
22.8 %	2440	2491	2542	2593	2644	2695	2746	2797	2848	2899	2950
23.9 %	2319	2367	2416	2464	2513	2561	2610	2658	2707	2755	2804
25.1 %	2210	2256	2302	2348	2394	2441	2487	2533	2579	2625	2671
26.3 %	2110	2154	2198	2242	2286	2331	2375	2419	2463	2507	2551
27.5 %	2019	2061	2103	2146	2188	2230	2272	2315	2357	2399	2441
28.7 %	1936	1976	2017	2057	2097	2138	2178	2219	2259	2300	2340
29.9 %	1859	1898	1937	1975	2014	2053	2092	2131	2170	2209	2247
31.0 %	1788	1825	1863	1900	1937	1975	2012	2049	2087	2124	2162
32.2 %	1722	1758	1794	1830	1866	1902	1938	1974	2010	2046	2082
33.4 %	1661	1696	1731	1765	1800	1835	1869	1904	1939	1974	2008
34.6 %	1604	1638	1671	1705	1738	1772	1805	1839	1872	1906	1940

7000 LITRE PRODUCTION LEVEL

REPAY-CAP RATE	PRICE/HL										
	$45.50	$46.25	$47.00	$47.75	$48.50	$49.25	$50.00	$50.75	$51.50	$52.25	$53.00
10.9 %	5589	5704	5818	5933	6047	6162	6277	6391	6506	6621	6735
12.1 %	5041	5144	5248	5351	5454	5558	5661	5765	5868	5971	6075
13.3 %	4591	4685	4779	4873	4967	5062	5156	5250	5344	5438	5532
14.5 %	4214	4301	4387	4474	4560	4647	4733	4819	4906	4992	5079
15.6 %	3895	3975	4055	4135	4215	4295	4374	4454	4534	4614	4694
16.8 %	3621	3695	3769	3844	3918	3992	4066	4141	4215	4289	4363
18.0 %	3383	3452	3521	3591	3660	3729	3799	3868	3938	4007	4076
19.2 %	3174	3239	3304	3369	3434	3499	3564	3629	3694	3760	3825
20.4 %	2989	3050	3112	3173	3234	3296	3357	3418	3480	3541	3602
21.6 %	2825	2883	2941	2999	3057	3115	3173	3230	3288	3346	3404
22.8 %	2678	2733	2788	2843	2897	2952	3007	3062	3117	3172	3227
23.9 %	2545	2597	2650	2702	2754	2806	2858	2911	2963	3015	3067
25.1 %	2425	2475	2525	2574	2624	2674	2724	2773	2823	2873	2923
26.3 %	2316	2363	2411	2458	2506	2553	2601	2648	2696	2743	2791
27.5 %	2216	2261	2307	2352	2398	2443	2489	2534	2580	2625	2671
28.7 %	2124	2168	2212	2255	2299	2342	2386	2429	2473	2517	2560
29.9 %	2040	2082	2124	2166	2208	2249	2291	2333	2375	2417	2459
31.0 %	1962	2003	2043	2083	2123	2164	2204	2244	2284	2325	2365
32.2 %	1890	1929	1968	2006	2045	2084	2123	2162	2200	2239	2278
33.4 %	1823	1860	1898	1935	1973	2010	2047	2085	2122	2160	2197
34.6 %	1761	1797	1833	1869	1905	1941	1977	2013	2050	2086	2122

7500 LITRE PRODUCTION LEVEL

REPAY-CAP RATE	PRICE/HL										
	$45.50	$46.25	$47.00	$47.75	$48.50	$49.25	$50.00	$50.75	$51.50	$52.25	$53.00
10.9 %	6086	6208	6331	6454	6577	6700	6823	6945	7068	7191	7314
12.1 %	5489	5600	5710	5821	5932	6043	6154	6264	6375	6486	6597
13.3 %	4999	5100	5201	5301	5402	5503	5604	5705	5806	5907	6008
14.5 %	4589	4682	4774	4867	4959	5052	5145	5237	5330	5423	5515
15.6 %	4241	4327	4412	4498	4584	4669	4755	4840	4926	5012	5097
16.8 %	3943	4022	4102	4181	4261	4340	4420	4500	4579	4659	4738
18.0 %	3683	3757	3832	3906	3980	4055	4129	4203	4278	4352	4426
19.2 %	3456	3526	3595	3665	3735	3804	3874	3944	4014	4083	4153
20.4 %	3255	3321	3386	3452	3518	3583	3649	3715	3780	3846	3912
21.6 %	3076	3138	3200	3262	3324	3386	3448	3511	3573	3635	3697
22.8 %	2916	2975	3033	3092	3151	3210	3269	3328	3387	3445	3504
23.9 %	2771	2827	2883	2939	2995	3051	3107	3163	3219	3275	3331
25.1 %	2641	2694	2747	2801	2854	2907	2960	3014	3067	3120	3174
26.3 %	2522	2573	2623	2674	2725	2776	2827	2878	2929	2980	3031
27.5 %	2413	2462	2510	2559	2608	2657	2705	2754	2803	2851	2900
28.7 %	2313	2360	2407	2453	2500	2547	2593	2640	2687	2733	2780
29.9 %	2221	2266	2311	2356	2401	2446	2490	2535	2580	2625	2670
31.0 %	2137	2180	2223	2266	2309	2352	2395	2439	2482	2525	2568
32.2 %	2058	2100	2141	2183	2224	2266	2307	2349	2390	2432	2474
33.4 %	1985	2025	2065	2105	2145	2185	2226	2266	2306	2346	2386
34.6 %	1917	1956	1995	2033	2072	2111	2149	2188	2227	2265	2304